REMARKS

By this amendment, applicants have amended claim 1 to positively recite the method steps, amended claim 15 to be independent form and added a new dependent method claim 20 further defining the method in terms of the operation of the control unit. Applicants have also amended the dependent device claims to ultimately depend from independent claim 15. In addition, applicants have amended claims 1 and 15 to recite "continuing to provide an increased oxygen level of the exhaust gases" rather than "the oxygen level of the exhaust gases is increased" or "increasing the oxygen level" based on the disclosure in the paragraph bridging pages 6 and 7 of the specification.

Applicants, through their undersigned attorney, thank the Examiner for the interview conducted with the undersigned on January 14, 2009. During the interview, the undersigned explained the differences between the present invention and the claims then in the application. The Examiner understood the differences but indicated that he had to update his search and consult with his supervisor. The Examiner suggested amending claim 1 to recite active method steps. In addition, the Examiner suggested reciting more details of the control unit of claim 15.

Claims 1-19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,988,361 to Van Nieuwstadt et al. in view of U.S. Patent No. 4,450,682 to Sato et al. Applicants traverse this rejection and request reconsideration thereof.

The present invention relates to a method and device for regenerating a particle filter. According to the method of the present invention, the internal temperature of at least two regions within the filter between the inflow face and the outflow face is monitored. Likewise, according to the device of the present invention, at least two

temperature sensors are located inside the filter between the inflow face and the outflow face. According to the method of the present invention, as set forth in claim 1, the method includes monitoring the internal temperature of at least two regions within the filter between the inflow face and outflow face, reducing the oxygen level of the exhaust gases when at least one of the temperatures monitored is greater than a critical temperature, and continuing to provide an increased oxygen level when all of the temperatures monitored by the at least two temperatures sensors are less than the critical temperature. The device of the present invention and includes a control unit for controlling an oxygen level of exhaust gases passing through the filter during regeneration in response to temperatures measured by the at least two temperature sensors.

As recognized by the Examiner, the Van Nieuwstadt et al. patent fells to disclose monitoring the internal temperature of at least two regions within the filter between the inflow face and the outflow face.

Moreover, the van Nieuwstadt et al. does not disclose the combination of the last two steps of the method step forth in claim 1 or the control unit set forth in claim 15. That is, the van Nieuwstadt et al. patent does not describe decreasing the oxygen level of the exhaust gases, when the monitored temperature is a critical temperature for stopping (or for slowing) the DPF regeneration and then, when all monitored temperatures are less than the critical temperature, continuing to provide an increased oxygen level of the exhaust gases for starting again (or for the continuing) the DPF regeneration, or any control unit for doing so.

The Sato et al. patent discloses (see figure 4 with the specification column 5, line 42 to column 6, line 20 in relation to column 3, lines 14-68) a particle filter regeneration device. This device comprises a casing (1) with an inlet portion (1a) as

well as an outlet portion (1b) and a by-pass exhaust gases branch (15) between the inlet and the outlet. The device also comprises a valve (16) in the diverging point of the casing and the branch for selectively supplying the exhaust gases into the casing or into the branch. A member filter (2), acting as carbon particles filter, is located inside this casing between the inlet and the outlet. This filter comprises two thermocouples (17, 18) located in the vicinity of the upper stream side (inlet face) and the downstream side (outlet face) of the filter. An air injection device (9, 10, 90) is used for introducing fresh air to the inlet face of the filter. A heater (50), made of resistance wire, is provided on the inlet face of the member filter. A control circuit unit (14) is used to manage the regeneration operation of the device, notably in dependency of the signal of the differential pressure detector (13).

During the working of the regeneration device, as the control unit receives a signal from detector (13) according to the member filter is saturated, this control unit begins the sequence of the regeneration. For this, the valve (16) is controlled in a position in which the exhaust gases circulate only in the by-pass branch (15), the inlet portion (1a) of the casing being closed. The heater (50) is supplied by electric current and the inlet face of the member filter is heated up to a predetermined temperature (column 6, lines 1 and 20). As the thermocouple (19), located in the vicinity of the inlet face, detects a predetermined temperature of the filter member, a signal is sent to the control unit. This control unit stops electric current to be supplied to the heater and starts the injection of fresh air into the casing by the air device (9, 10, 90) and particularly towards the inlet face of the member filter. This air, passing through the member filter, is heated by the warmed part of the filter up to the outlet face of this filter by realizing the step of burning the particle and the regeneration of the filter. As the other thermocouple (18) detects that the internal

temperature of the filter reaches a predetermined level, it sends a signal to the control unit. This control unit stops the air injection and the valve (16) is located in such a position that the exhaust gases pass again through the member filter.

The Sato et al. patent can not be considered as pertinent because it does not disclose, during the regeneration sequence, that the oxygen level of the exhaust gases is dependent of the temperature of the filter. The first thermocouple (19) (in the vicinity of the inlet face of the filter) is only used to control the heater (50) while the other thermocouple (18) (located in the vicinity of the exhaust face of the member filter) controls the air device for stopping the injection of this air when the temperature is too high.

Moreover, this document does not mention or provide any reason for one of ordinary skill in the art to include any means for the supervision of the temperature inside the filter in order to avoid its destruction.

Accordingly, the Sato et al. patent does not remedy the deficiencies noted above with respect to van Nieuwstadt et al. Therefore, the presently claimed invention is patentable over the proposed combination of van Nieuwstadt et al. and Sato et al.

In view of the foregoing amendments and remarks, favorable reconsideration and allowance of all of the claims now in the application are requested.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing

of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 612.46212X00), and please credit any excess fees to such deposit account.

Respectfully submitted,

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